

What is claimed is:

1. A method associated with a process comprising:
  - a. building a general purpose flowsheet for said process, said general purpose flowsheet representing a model of said process;
  - b. generating said model of said process from said general purpose flowsheet; and
  - c. executing upon said model generated from said general purpose flowsheet applications selected from simulation, estimation and optimization.
2. The method of claim 1 wherein said building of said general purpose flowsheet for said process comprises:
  - a. selecting the solid, liquid and/or gas components of said process;
  - b. selecting from a library of apparatus icons the icons of the apparatus associated with said process; and
  - c. connecting said selected icons with streams comprised of said selected components to produce said general purpose flowsheet.
3. The method of claim 1 wherein said applications may be either on-line or off-line applications.
4. The method of claim 1 wherein said applications may be either steady state or dynamic applications.
5. The method of claim 1 wherein said process may be either a batch process, a continuous process or another type of process.
6. A computer readable medium having instructions associated with a process, said instructions comprising:
  - a. building a general purpose flowsheet for said process, said general purpose flowsheet representing a model of said process;
  - b. generating said model of said process from said general purpose flowsheet; and
  - c. executing applications selected from simulation, estimation or optimization upon said model

generated from said general purpose flowsheet.

7. The computer readable media of claim 6 wherein said building of said general purpose flowsheet for said process comprises:

a. selecting the solid, liquid and/or gas components of said process;

b. selecting from a library of apparatus icons the icons of the apparatus associated with said process; and

c. connecting said selected icons with streams comprised of said selected components to produce said general purpose flowsheet.

8. The computer readable media of claim 6 wherein said applications may be either on-line or off-line applications.

9. The computer readable media method of claim 6 wherein said applications may be either steady state or dynamic applications.

10. The computer readable media of claim 6 wherein said process may be either a batch process, a continuous process or another type of process.

11. A method for enabling a user to build a general purpose process flowsheet whose underlying model may be used to execute applications selected from simulation, estimation and optimization comprising:

(a) enabling said user to build said general purpose process flowsheet comprising:

providing a graphical flowsheet builder;

providing a library of common equipment models;

providing selectable chemical species and their thermophysical property definitions; and

providing stream connectors to allow said user to connect models selected from said library;

(b) providing an interpreter to generate said underlying model from said general purpose flowsheet; and

(c) providing a solution engine that enables said user to use said generated underlying model in

applications selected from simulation, estimation and optimization.

12. A method for enabling a user to build a general purpose process flowsheet whose underlying model may be used to execute applications selected from simulation, estimation and optimization comprising:

(a) enabling said user to build said general purpose process flowsheet comprising:

providing a graphical flowsheet builder;

providing a library of common equipment models;

providing selectable chemical species and their thermophysical property definitions; and

providing stream connectors to enable said user to connect models selected from said library;

(b) providing an interpreter to generate said underlying model from said general purpose flowsheet; and

(c) providing a solution engine that allows applications selected from simulation, estimation and optimization to be executed upon said generated underlying model.

13. An apparatus for building a general purpose flowsheet having an underlying model for a process comprising:

a) a library of selectable common equipment models;

b) a repository of selectable chemical species and their thermophysical property definitions;

c) a flowsheet editor for selecting one or more of said selectable common equipment models and one or more of said selectable chemical species and thermophysical properties definitions associated with said one or more selected models and linking said one or more selected models by stream connectors to build said general purpose flowsheet;

d) an interpreter to generate said underlying model from said general purpose flowsheet; and

e) a solution engine for executing applications selected from simulation, estimation and optimization using said generated underlying model.